



## INTRODUCTION

In 1982, the Wayne Soil and Water Conservation District (SWCD), in cooperation with the USDA, Soil Conservation Service (SCS) took part in the National Resources Inventory (NRI). Information was collected on over 200 sample units to provide county reliable resource data.

This inventory provided natural resource data on (1) land use, (2) conservation treatment needs, (3) prime farmland, (4) potential cropland, (5) sheet and rill erosion, (6) flood prone areas, (7) wetlands, and (8) small bodies of water.

The study identifies erosion and land management problems in Wayne County. These problems were addressed and priorities set in the District's long-range program. Top priorities include:

- |   |  |
|---|--|
| 1. Soil Erosion                             | 6. Flooding and Floodplains              |
| 2. Planning Assistance                      | 7. Fish and Wildlife                     |
| 3. Prime Farmland                           | 8. Wetlands                              |
| 4. Forestry                                 | 9. Recreation                            |
| 5. Water Quality and<br>Pollution Abatement | 10. Information and Education<br>Program |

This publication distributes the results of the Wayne County Resources Inventory. The publication describes the soil resource base and highlights some problems that could reduce future soil productivity. Along with reduced production, off site damages could be expected. The primary objective of the Wayne SWCD is to promote the wise use of the soil resource base in Wayne County.

The information in this publication, like all information developed from a statistical study, has varying degrees of reliability or confidence levels. All values expressed here, representing over 10 percent of the county area, have a confidence level greater than 90 percent or they are at least 90 percent accurate. Smaller values, those representing less than 10 percent of the total county area, will be less than 90 percent accurate.

### Land Use

Land area measurements were made for Wayne County during the 1980 Census by the U.S. Department of Commerce.

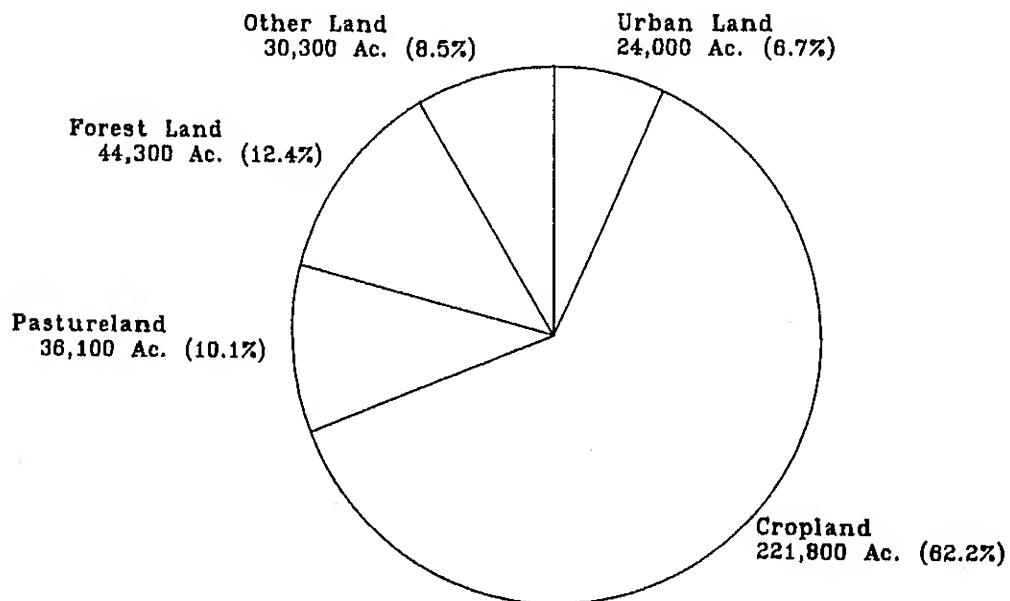
Table 1. Wayne County Area Measurements

Nonfederal Land and Small Bodies of Water	356,500 Acres
Federal Land	0 Acres
Census Water (Large Bodies of Water)	200 Acres
Total Surface Area	356,700 Acres

This report addresses only nonfederal land.

Figure 1.

### Wayne County Land Use



TOTAL NONFEDERAL ACREAGE IN WAYNE COUNTY = 356,500 ACRES

#### KEY POINT:

- o Cropland is the largest land use in the county.

## Land Use by Capability Class

Soils can be classified in a number of ways. SCS uses a land capability classification system that groups soils on the basis of their ability to produce common cultivated crops and pasture plants without deterioration. Land capability classes and subclasses in Wayne County are based on the soil survey.

Capability classes are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of agricultural use.

Class III soils have severe limitations that reduce the choice of agricultural use.

Class IV soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Each capability class except Class I has subclasses to identify specific limitations. The letter "e" stands for erosion risk; "w" for wetness; and "s" for soils limited mainly because they are shallow, droughty, or stony.

NA areas are not classified, such as rural housing, strip development, etc.

Table 2. Rural Land Use Acreage by Capability Class

CLASS	CROPLAND Acres	PASTURELAND Acres	FOREST LAND Acres	OTHER RURAL LAND Acres	TOTAL
I	500	0	0	0	500
II	161,400	22,200	19,500	7,900	211,000
III	52,400	8,200	13,100	1,700	75,400
IV	5,500	4,100	4,600	0	14,200
VI	1,500	1,100	3,000	0	5,600
VII	500	500	4,100	0	5,100
NA	0	0	0	5,600	5,600
TOTAL	221,800	36,100	44,300	15,200	317,400

KEY POINTS:

- o Seventy-three percent of all cropland is on Class II.
- o Twenty-four percent of all cropland is on Class III.
- o Sixty-six percent of all rural land use is on Class II.
- o Seventy percent of all rural land use is cropland.
- o Eleven percent of all rural land use is pastureland.
- o Fourteen percent of all rural land use is forest land.

### Prime Farmland

Prime farmland is one of several kinds of important farmlands defined by the U.S. Department of Agriculture. It is of major importance in providing the Nation's short and long range needs for food and fiber. Prime farmland soils are defined as the soils that are best suited to producing food, fiber, forage, feed, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources. Farming these soils results in the least damage to the environment.

Prime farmland is also the easiest and least costly to develop for non-agricultural uses. Urbanization and other land uses have the potential to consume significant areas of prime farmland. Decisions need to be made at the local level to encourage wise use of agricultural lands.

Wayne County has about 218,200 acres of prime farmland with all of it in Capability Classes I, II, and III.

Table 3. Prime Farmland by Rural Land Use

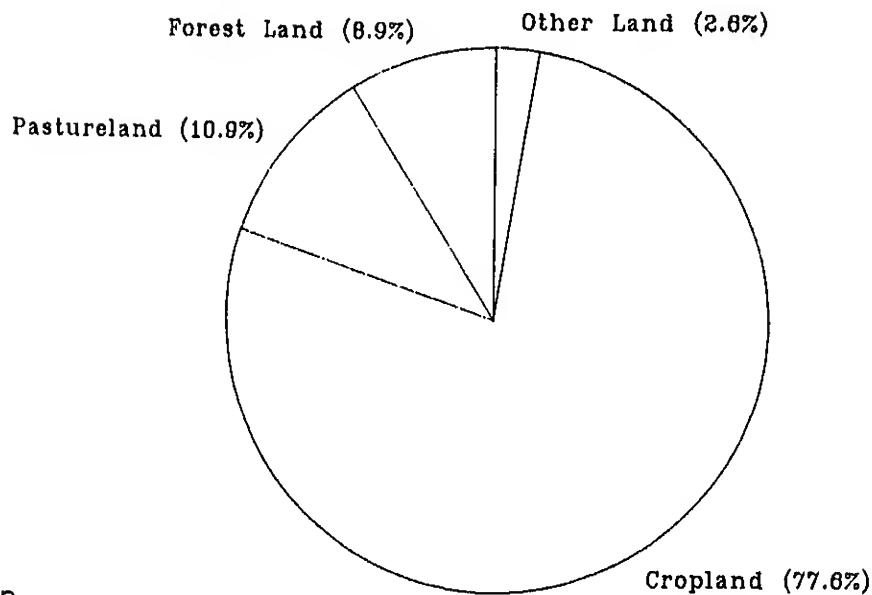
LAND USE	TOTAL ACRES	PRIME FARMLAND	
		Acres	Percent
Cropland	221,800	169,400	76
Pastureland	36,100	23,700	66
Forest Land	44,300	19,400	44
Other Land	15,200	5,700	38
TOTAL	317,400	218,200	69

Most of the prime farmland in the county is currently cropland. Figure 2 illustrates the uses of prime farmland.

## Use Of Prime Farmland

Figure 2.

Wayne County



### Soil Erosion

Soil erosion is a continuously occurring natural process that loosens and transports soil particles. Erosion occurs slowly on undisturbed forest land and areas with adequate permanent vegetative cover. Soil losses are quite high on sloping cropland that is continually cultivated and left unprotected during several months every year.

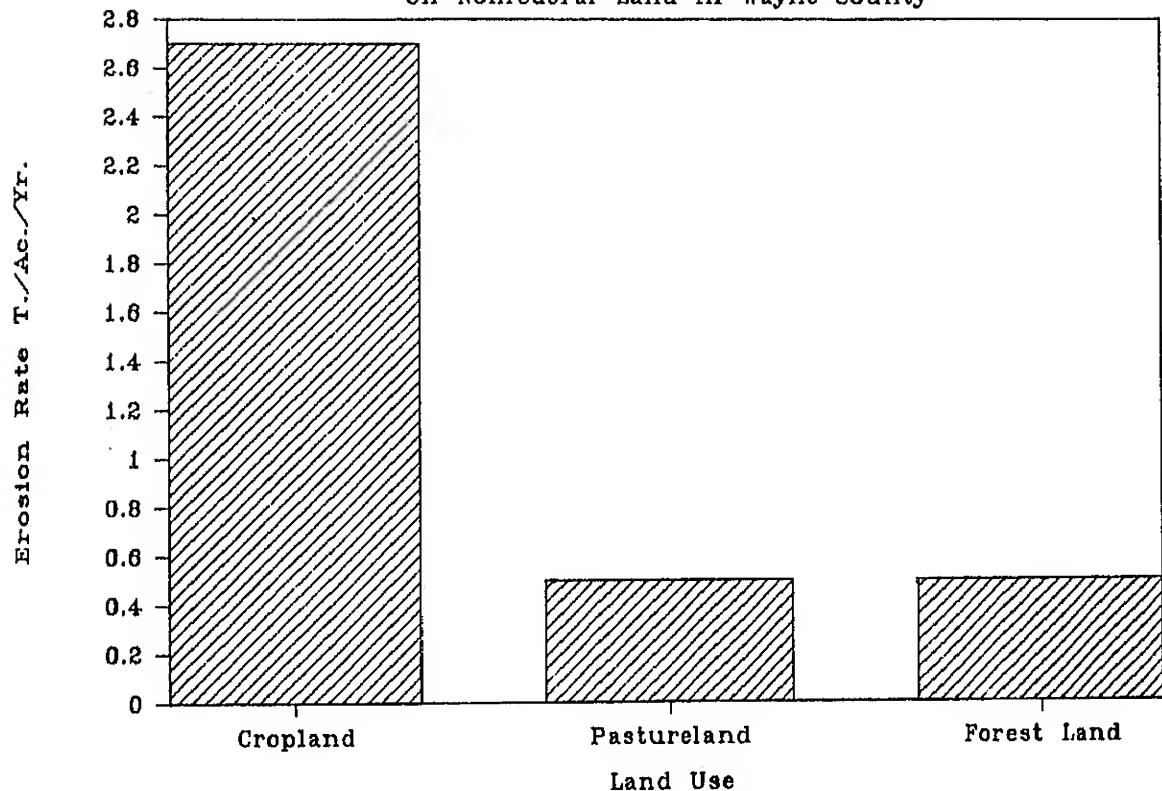
More than 631 thousand tons of topsoil erode on Wayne County agricultural land annually. Ninety-four percent of the erosion is on cropland.

Table 4. Annual Soil Erosion by Agricultural Land Use

LAND USE	ACRES	TONS	TONS/ACRE
Cropland	221,800	594,200	2.7
Pastureland	36,100	17,200	0.5
Forest Land	44,300	20,200	0.5
TOTAL	302,200	631,600	
AVERAGE			2.1

## Erosion Rate By Land Use

On Nonfederal Land In Wayne County



### KEY POINTS:

- o Cropland erosion accounts for 94 percent of the sheet and rill erosion from agriculture.
- o Annual agricultural sheet and rill erosion would fill over 3,500 railroad cars.

Table 5. Erosion on Cropland by Capability Class and Subclass

CLASS AND SUBCLASS	ACRES	TONS	TONS/ACRE
I	500	900	1.8
IIe	98,600	230,200	2.3
IIw	60,500	133,800	2.2
IIIs	2,300	7,800	3.4
IIIe	33,500	118,900	3.6
IIIf	17,900	37,000	2.1
IIIs	1,000	200	0.2
IVe	5,500	44,500	8.1
VIe	1,500	12,000	8.0
VIIe	500	8,900	17.8
TOTAL	221,800	594,200	
AVERAGE			2.7

KEY POINTS:

- o Sixty-three percent of all cropland erosion is on Class II soils with an average erosion rate of 2.3 tons per acre.
- o Twenty-six percent of cropland erosion is on Class III soils.
- o Average erosion losses on Classes IV and VI increase to 8 tons per acre.
- o Classes IIe and IIIe account for 60 percent of the acreage and 59 percent of the cropland erosion.

Soil can tolerate small amounts of erosion and remain productive for agriculture indefinitely. When erosion is above this tolerable limit, the soil resource base cannot be maintained and the future ability of the soil to produce crops is threatened. The tolerable soil loss ("T") ranges from three to five tons per acre per year, with most of the soils in Wayne County having a "T" of four.

Almost 34,000 acres of cropland are eroding at rates higher than the soil loss tolerance. Many areas on steeper slopes present a challenge to maintain acceptable average soil losses since they are usually located in cropland fields with both tolerable and above tolerable conditions.

Table 6. Cropland in Relation to "T" by Capability Class and Subclass

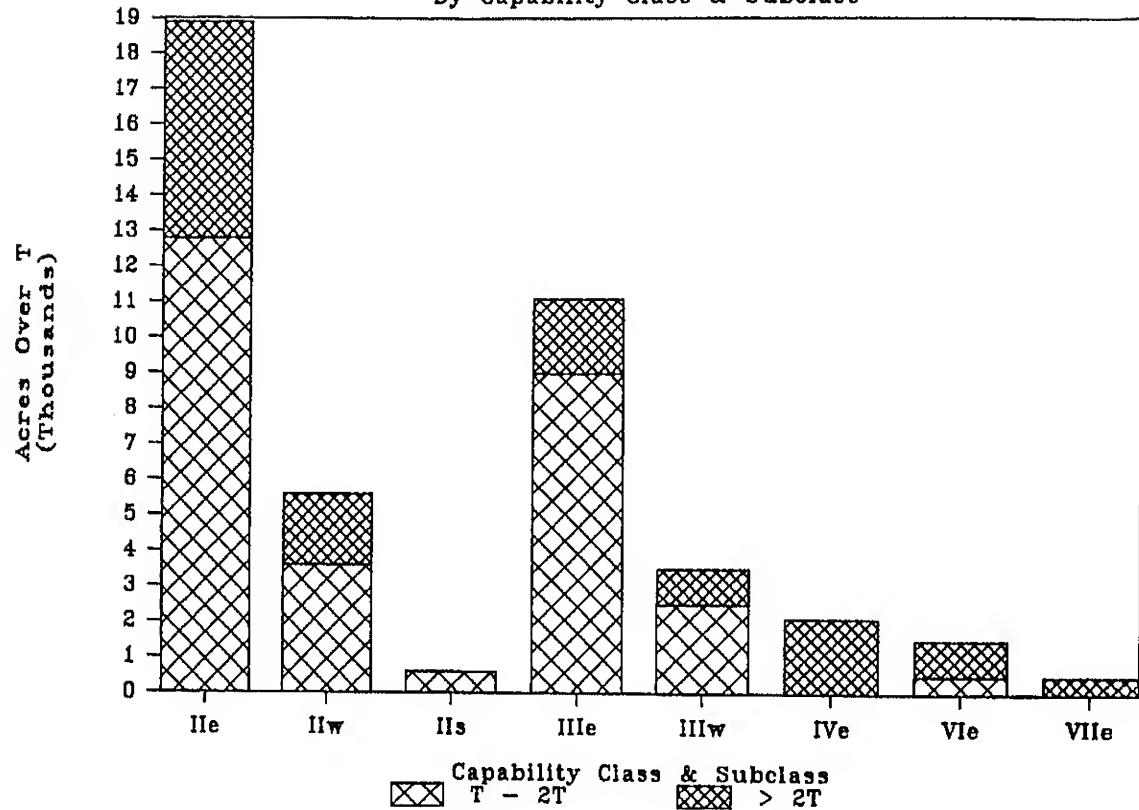
CAPABILITY CLASS	TOTAL	LESS THAN "T"	"T" - "2T"	GREATER THAN "2T"
-----ACRES-----				
I	500	500	0	0
IIe	98,600	79,700	12,800	6,100
IIw	60,500	54,900	3,600	2,000
IIs	2,300	1,700	600	0
IIIe	33,500	22,400	9,000	2,100
IIIw	17,900	14,400	2,500	1,000
IIIs	1,000	1,000	0	0
IVe	5,500	3,400	0	2,100
Vle	1,500	0	500	1,000
VIIe	500	0	0	500
TOTAL	221,800	178,000	29,000	14,800

#### KEY POINTS:

- o Twenty percent of all cropland is eroding over "T".
- o Cropland is located on the better soils of the county, yet one out of five acres of this productive land is eroding excessively.

## Cropland Eroding Over "T"

By Capability Class & Subclass



### KEY POINTS:

- o Twenty percent of all cropland or 33,800 acres are eroding over "T".
- o Classes IIe, IIw, IIIe, and IIIw account for 89 percent of the cropland eroding over "T".
- o Over one-half of all acres eroding excessively are on slopes of less than six percent.

### Conservation Treatment Needs

Many acres of Wayne County agricultural land need one or more different types of conservation treatment to either protect or improve the soil and water resources. The different conservation practices used to accomplish these objectives vary by land use.

Cropland treatment usually involves practices like conservation cropping systems, conservation tillage, contour farming, contour stripcropping, sod waterways, erosion control structures and subsurface drainage systems. Pastureland practices include rotational grazing, pasture management, and pasture planting. These practices may be used to protect or improve the soil, water, and plant resources. Conservation practices needed on forest land may include livestock exclusion, timber stand improvement, and tree planting. Land designated as adequately protected is properly managed for production and protected from excessive erosion.

Table 7. Conservation Treatment Needs and Percent  
by Land Use

LAND USE	TOTAL ACRES	TOTAL ACRES NEEDING TREATMENT	% TOTAL ACRES NEEDING TREATMENT
Cropland	221,800	103,200	47
Pastureland	36,100	15,300	42
Forest Land	44,300	31,700	72
Other Land	15,200	500	3
<b>TOTAL</b>	<b>317,400</b>	<b>150,700</b>	<b>47</b>

## SUMMARY

Agriculture accounts for 89 percent of Wayne County land use with 62 percent used as cropland.

Prime farmland acreage accounts for 69 percent of all agricultural land. Excessive erosion is a problem on 33,800 acres of cropland. These areas occur on all slope classes and require a change in management to solve the problem. Forty-seven percent of the agricultural land needs additional conservation treatment.

Over 50,000 acres of soil mapped in the Wayne County Soil Survey, issued July 1984, has reduced productivity from erosion. Currently, 20 percent of all cropland is eroding over tolerable erosion levels.

All programs and services of the U.S. Department of Agriculture are available to everyone without regard to race, creed, color, sex, or national origin.